Building a Commercialization Plan Outline

Directions: The purpose of this activity is to give you the opportunity to practice building a commercialization plan outline, using the information you just learned today. The effort required to build an entire plan is beyond the scope of this course, because it takes far more time and preparation than we have time for today.

This workbook will provide you with a step-by-step approach for building your outline, and will give you an excellent basis for beginning a plan, if you are using an in-house technology.

Points to remember when building the plan:

- A commercialization plan is a tool whose function is to not only serve internal management needs, but also to supply information to external organizations who may be critical to success. A commercialization plan should be *reviewed frequently* and *updated at least annually*.

- Elements that should be included in the commercialization plan:
  - Executive summary
  - Table of contents
  - Product description
  - Target market and competition
  - Management description
  - Operations
  - Schedule
  - Appendices

Executive Summary

The executive summary consists of short paragraphs, summarizing the main sections of the plan. It is intended for executive-level review and should NOT exceed two pages. For today's purposes, instead of writing the summary, make a bulleted list of main points that would be included. In order to capture the most salient points of the plan, it may be helpful to save this for last.

Technology/Product Description

Clearly describe the commercial product(s) in terms that any "layperson" could understand, and include:

a. A technology description that is suitable for review by individuals with technical and business backgrounds;
b. How the product(s) will benefit the customer (what is its uniqueness);
c. Projections of technology readiness (e.g., how long it will take to produce a transferable technology).

Target Market(s) and Competition

This section should demonstrate strong market knowledge and list target market area(s). Items that may be included in this section:

a. Description of the target applications
b. Analysis of market need and key customers
c. Overview of the tactics to be used to connect to industry
d. Timelines and action steps to develop early partnerships, collaborations, field testing, etc.
e. Description of technical expertise, facilities, and other resources needed or available
f. Identification of the action steps for identifying target companies
g. The intellectual property protection and business development tactics
h. Specific patent and licensing strategy

Remember: Not all of the above items may be included in all plans. Use your common sense!

Management Description

Identify the key business and technical management personnel who would be managing the technology's commercialization. Include their technical experience and skills, and show how these individuals give a distinct competitive advantage to the venture. Make this section attractive to potential partners.

Operations

The operations portions of the plan should be developed in cooperation with the industry partner. However, by trying to define these elements beforehand, you can appreciate what resources are needed for the commercialization process and will be able to do a better job of assessing a potential partner. The operations sections of the plan has several subsections:

- An understanding of technologies
- Potential development obstacles
- Relationship between commercialization and the mission-related activities
- Connecting with the market
- Intellectual property protection considerations
- Identifying the level of organizational support
- Identifying sufficient control processes
- Target range of milestones
- Documenting the plan

On the next several pages, you will be addressing the above elements.

Operations: Understanding of the Technology

Demonstrate an understanding of the unique capabilities, limitations, characteristics, or other features of the technology. This requires an understanding of the state of the art in the intended fields of use. If you do not have the necessary expertise, find somebody else who does. The inventor is an excellent source, but do not stop there. Search the Internet and professional publications, and contact industry experts.

Questions to answer in this section of the plan include:

- What are the competitive technologies? Emerging technologies?
- Is the new technology expected to be better than existing technology—in what ways?
- Will it be faster—by what measure?
- Will it be cheaper—how much?

Operations: Potential Development Obstacles

Be up-front about any barriers to development or commercialization. For instance, do you foresee barriers in agency approval (e.g., EPA, FDA)? What barriers might there be to market acceptance? Again, interviews with industry experts and industry information sources are key to understanding the market issues that will affect the chances for commercialization.

Operations: Relationship between the Commercialization Activity and the Mission-Related Activity

A higher priority can be placed on the technology if NASA's mission objectives can be met while making accommodations to enhance the value to industry. If this is the case, it should clearly be stated.

HOW?

Begin by determining the value of the new technology to a company and its customers. Value is high when it has the potential to increase sales or to decrease costs either for the company or its customers. Try to relate the success of the technology in industry to mission success. Will improvements made to the technology be usable within NASA?

Operations: Approaches for Connecting with the Market

Assuming that the technology is of sufficient value to industry, the next consideration is to analyze the possible paths to market. Some options:

a. Develop a partnership with a company early in the program.
b. Develop a partnership with several companies or a consortium early in the program.
c. Solicit peer reviews of the program while there is time to influence the program to optimize its market value.
d. Wait until the core technology is proven on the bench, and then form partnerships.
e. For technologies that are useful to industry, an active approach to commercialization should be selected, such as publishing results, presenting papers, holding workshops, marketing the technology via the Web, or participating in trade shows.

Discuss the approach or approaches that you will take.

Operations: IP Protection Considerations

If patentable technologies are expected to arise from the program, determine early on whether the full measure of value should be claimed by the government for the taxpayer or whether the industry partner will obtain or retain the intellectual property. In this section, demonstrate how these considerations have been addressed. For instance, will any new IP developed directly benefit NASA? If so, document how NASA will want to pursue its options to the improvements.

Operations: Identify Level of Organizational Support

In this section, you will characterize the level of support that your organization will commit to the process after the license(s) have been signed. This may require canvassing your office to find volunteers to make official commitments to lend their support.

The level of support devoted to the success of a technology or program often foretells its future. If there are human resources committed to it, it has a better chance to succeed. Plan for individuals to spend their time on this project. Formally allocate their time if possible, as many of these individuals may already be over-committed.

Operations: Identify Sufficient Control Processes

In this section, you will describe the control processes that will ensure that the innovators are allowed to meet their mission requirements while simultaneously making necessary contributions to the commercialization objective. For instance, periodic reviews or status updates from the innovators are two methods of keeping abreast of progress in this area. Be creative with other simple, unobtrusive ways of obtaining information.

Operations: Identify a Target Range of Milestones

Identify a target range of milestones for expected commercialization success, such as:

- Milestone dates for anticipated partnerships to be in place.
- Specific enabling language to be used in flowing down the technology commercialization requirements to the contractors or recipients.

Determining milestones can be a difficult task. They need to be specific enough to track, but not so carved in stone as to compromise the project if a timeline should slip, due to a delay on either side. Keep track of milestone dates and update them in the plan if it becomes necessary.

Operations: Document the Plan

The final element of the operations section is the documentation of the plan, based on the findings of the analysis of the technology and the market. Key conclusions and decisions need to be made. Based on the research and analysis outlined in the plan:

a. Identify which parts of the technology development program will likely produce commercially attractive technology.
b. Adjust program plans appropriately to accommodate commercially important features.
c. Create a commercialization roadmap, which helps provide direction for team members.
d. Decide whether the commercialization effort (and technology development effort will benefit from early industry involvement.
e. Determine the most effective level of industry involvement.
f. Create the general plan for protecting important intellectual property.
g. Anticipate the mechanisms for marketing the technology.

These types of decisions will impact the direction the plan will take. Therefore, this should truly be a team effort. Again, include the partner(s) on all aspects of operations.

Schedule

In this section, you will provide the schedule for development, production and marketing of the end product(s) and the schedule for submittal of periodic reports. This should also be done in conjunction with the partner(s), as their operations will impact the commercialization timeline. This can be done simply in a table format.